DETAILED ACTION

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview

with Thomas George on 9/22/2009.

(1) Regarding claim 1:

Replace lines 16-18 by the following; ---wherein the filter tap coefficient module

multiplies an inverse of a communication channel transfer function and a pulse

mapping to calculate the plurality of filter tap coefficients, **wherein the plurality of filter**

tap coefficients are a plurality of BE-ZFE filter tap coefficients.---

(2) Regarding claim 11:

Replace line 3-11 by the following:

---multiplying, by a processing device, an inverted channel characteristic vector

by a pulse mapping vector to calculate a plurality of **BE-ZFE (Bit-Edge Zero Forcing**

Equalizer) filter tap coefficients;

truncating the plurality of **BE-ZFE** filter tap coefficients to include only the most

significant filter tap coefficients of the plurality of **BE-ZFE** filter tap coefficients;

receiving the truncated plurality of **BE-ZFE** filter tap coefficients;

modifying an original shape of a pulse that is substantially located within a bit period to a modified pulse that is located within a sequence of bit periods using the truncated plurality of **BE-ZFE** filter tap coefficients;---

(3) Regarding claim 13:

Line 2, replace "calculating the plurality of filter tap coefficients" to ---calculating the plurality of **BE-ZFE** filter tap coefficients---.

(4) Regarding claim 14:

Line 2, replace "calculating the plurality of filter tap coefficients" to ---calculating the plurality of **BE-ZFE** filter tap coefficients---.

(5) Regarding claim 15:

Lines 2-3, replace "each filter tap coefficient of the plurality of filter tap coefficients" by ---each filter tap coefficient of the plurality of **BE-ZFE** filter tap coefficients---.

(6) Regarding claim 16:

Line 6, replace "truncating, by the processing device, the plurality of BE-ZFE filter tap" by ---**truncating the plurality of BE-ZFE filter tap**---.

Line 9, replace "receiving, by a filter device, the truncated plurality of BE-ZFE filter tap" by ---**receiving the truncated plurality of BE-ZFE filter tap**---.

Line 11, replace "modifying, by the filter device, an original shape of a pulse that is substantially" by ---**modifying an original shape of a pulse that is substantially**---.

Allowable Subject Matter

2.   Claims 1-3, 5-11, 13-20 are allowed.

3.   The following is an examiner's statement of reasons for allowance:

The present invention describes an apparatus and method of a Bit-Edge Zero-Forcing Equalizer comprises a filter tap coefficient module that provides calculates a plurality of filter tap coefficients, the filter tap coefficient module being adapted to truncate the calculated plurality of filter tap coefficients to include only the most significant filter tap coefficients of the plurality of filter tap coefficients; a filter that includes a plurality of filter taps such that each filter tap is adjusted according to one filter tap coefficient of the truncated plurality of filter tap coefficients; wherein the filter is enabled to modify an original shape of a pulse in a communication channel, wherein the modified pulse is located within a sequence of bit periods; wherein the modified pulse has zero crossings located substantially at bit edges of each bit period within the sequence of bit periods except those bit edges immediately adjacent to a bit period in which the pulse is substantially located to enhance detection of the pulse's original data value from the modified pulse; and wherein the filter tap coefficient module multiplies an inverse of a communication channel transfer function and a pulse mapping to calculate the plurality of filter tap coefficients, wherein the plurality of filter tap coefficients are a plurality of BE-ZFE filter tap coefficients. The closest prior art, Jaffe et al. (US 2004/0252755 A1) in view of Minuhin et al. (US 5,430,768) and Heikkila et al. (US 2003/0174780 A1) together disclose a similar system and method but fail to disclose the filter tap coefficient module multiplies an inverse of a communication channel transfer

function and a pulse mapping to calculate the plurality of filter tap coefficients, wherein

the plurality of filter tap coefficients are a plurality of BE-ZFE filter tap coefficients and

truncate the calculated plurality of filter tap coefficients to include only the most

significant filter tap coefficients of the plurality of filter tap coefficients. This distinct

feature has been added to independent claims 1, 11, and 16, thus rendering claims 1-3,

5-11, 13-20 allowable.

        Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

        Any inquiry concerning this communication or earlier communications from the

examiner should be directed to SIU M. LEE whose telephone number is (571)270-1083.

The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday

off.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Siu M Lee/
Examiner, Art Unit 2611
9/25/2009

/Chieh M Fan/
Supervisory Patent Examiner, Art Unit 2611